AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES
	1 | 1

2. AMENDMENT/MODIFICAITON NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicble)
A00002	Mar 1, 2012	72-3009-12	

6. ISSUED BY	CODE	7. ADMINISTERED BY (If other than Item 6)	CODE
Supply Officer (Code 3410) Naval Research Laboratory Phone: 202-767-0022 E-mail: diltricia.montgomery@nrl.navy.mil	N00173	Purchasing Officer (Code 3410) Naval Research Laboratory 4555 Overlook Avenue, S.W. Washington, DC 20375-5329	N00173

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)

All Quoters

CODE | FACILITY CODE

(X) | 9A. AMENDMENT OF SOLICIATION NO.

☒ N00173-12-Q-0056

9B. DATED (SEE ITEM 11)

Dec 30, 2011

☐ 10A. MODIFICATION OF CONTRACT/ORDER NO.

10B. DATED (SEE ITEM 13)

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☒ is extended, ☐ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a)By completing items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment your desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPIRATION DATA (If required)

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	
☐	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
☐	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
☐	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
☐	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☐ is not, ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

This amendment is issued to extend the closing date.

The above referenced Request for Quotation (RFQ) is amended to extend the closing date to 3/6/12

See additional specifications. All other terms and conditions will remain the same. See attached new specifications

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)	
		Diltricia Montgomery Purchasing Agent	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA (Signature of Contracting Officer)	16C. DATE SIGNED Feb 29, 201

NSN 7540-01-152-8070
Previous edition unusable

STANDARD FORM 30 (REV. 10-83)
Prescribed by GSA FAR (48 CFR) 53.243

Specification

Objective: The Remote Sensing Division wishes to procure a Data Storage, Organization and Delivery System.

Background: The Coastal and Ocean Remote Sensing Branch within the Remote Sensing Division (RSD) of the NRL collects and processes many forms of remote sensing data. Most of the data were collected from aircraft based systems. The data, which is collected world wide, includes multispectral imagery (MSI), hyperspectral imagery (HSI), Synthetic Aperture Radar (SAR), Thermal Imagery, panchromatic imagery, polarimetric imagery among other data types. Currently, the group has in excess of 200 TB of working space on four RAID systems, which are at, or near, full capacity. Additionally, another 100 TB of unprocessed data, or more, is stored on removable media. There is an expectation that more than 200 TB of raw data will be collected over the next 5 years.

Generally, once data is collected, an archival backup of the raw data is created. Processing of the data is then performed. The processing is done in multiple steps often creating a calibrated version of the data initially, followed by various products. For each TB of collected raw data, we will on average, create 3.5 TB of additional files. Raw data files tend to be large (>5 GB) while the final products can be small (10 MB.) More than 95% of the disk space will contain files that are greater than 10 MB in size. It is not required to maintain immediate access to all raw and collected data. Some portion, depending on system performance, may be able to be moved to near line (or off line), while the data that is most important remains on line.

The division is a Research and Development activity. It is not operational and therefore it is not a requirement that the system described here has a very low latency. System capacity should be viewed as more important than high performance in this regard. For example, we would view it as not cost effective to use 15k disks. The better solution would be additional disks that run at 7.2k.

In addition, the proposed solution should allow for upgrading down stream.

The system can be considered to be logically comprised of 2 parts: The first part is the physical storage hardware and accompanying operating system/software that is required to provide for storage and retrieval of data files. This piece of the acquisition will be referred to as the **Data Storage Package**. This piece is further divided into the online and offline segments. The second portion is the **Data Organization Software Package**. This package maintains the organization of the data and produced products such that portions of the raw data, or any produced product, can be quickly accessed. Additionally, this package assists in creating and viewing and data and products.

The **Data Storage Package** will meet the following specifications:

The system must be able to provide for online and off line data. The online system should consist of one of more servers with a total of 192 TB of storage required and 256 TB desired as measured before Raid set construction and formatting. It is preferred that the servers run Red hat Linux Enterprise, however, other operating systems are acceptable. Systems should be configured as Raid 6 and have 2 spare drives included.

Primary network connection, from the clients, to the hardware is 1 Gb/s wire ethernet. For each system that appears as a separate device from the user point of view, a 2 port Ethernet system is required, with 4 ports desired. The ability to upgrade to 10 Gb/s Ethernet is desired. As many as 15 clients should be able to attach to the server.

The vendor may propose a tape or a hard disk based system for the off line segments. The vendor should decide between tape-based and hard disk-based off line system on the basis of which method would provide the best reliability not necessarily the most capacity or the cheapest cost/TB. It is required that there is the ability to make archival backups on removable media, which can be removed from the room housing the system. It is acceptable that the off line storage be controlled manually or by a software package separate from the operating system. If a tape system is provided, a tape loader should be made part of the package. It is required that 40 slots may be accessible by the loader. It is desired that 80 slots be accessible. It is understood and that if the system proposed is a disk based approach, that the immediately available off line data (near line) would be more limited.

Uninterrupted Power Supplies (UPS) will be GFE. The vendor will provide information on how many APC model Smart UPS 3000s are required at least 4 weeks before installation. Provider must configure the system to shutdown gracefully during an extended power interruption.

The system must fit in no more than two side by side racks that are 28.875 in deep and that can be as tall as 55U. The systems must have all required hardware to mount the systems in these racks. The racks will be GFE. Provider will specify required rack space at least 4 weeks before installation. Additionally, vendor will provide any other information required to prepare the installation site.

Vendor will install all hardware. Installation means that all equipment will be rack mounted and required cables will be connected as needed to ensure the system is completely operational. Equipment will be connected to the NRL network once prudent virus scanning and testing is performed.

Vendor will provide system administrator training at an appropriate level. An appropriate level means that the assumed starting point is an experienced Linux administrator with further experience with GIS data server systems.

The **Data Organization Software Package** will meet the following specifications:

A data organization software package must be provided on its own server. First and foremost, the software must maintain data organization making it easy for end users to:

1) Catalog data including custom metadata formats
    a. Must be capable of 'crawling" through storage space looking for data
    b. Editing of metadata
    c. Allow cataloging of associated data (ground truth data associated with the aircraft collected data (similar to "business" data)
    d. Must be able to "watch' a particular directory structure and when new data shows up, it should follow created rules to automatically ingest, process (using user supplied codes), and catalog the data
2) Use a web based client to view either full or reduced resolution georeferenced images and visualize products on a map
    a. The server must allow connections from windows, MAC, or unix clients
    b. System should allow reprojection onto difference datums, subsetting of data, mosaicking of multiple images, section of bands (for MSI and HSI) for viewing
    c. Search for data products based on location, date taken, data type, or other catalog attributes
3) Allow for automatic provisioning of data – creation of thumbnails, footprints, etc.
4) Ingest and work with vector data
5) Ingest and work with Geotiff, NITF, MrSid, BIL/BSQ, and HDF imagery files
6) Create and execute processing chains through an Open Geospatial Consortium (OGC) compliant Web Processing Service (WPS)
    a. Run custom codes on data that may be found on multiple storage sites. The codes should run only on data sets that have the required characteristics and results should be provided back to the user
    b. Processing occurs on server computer
    c. View resulting products as new layers on map
    d. Automatically catalog resulting products
7) System must allow user based security that controls access to data
    a. By location of data
    b. By product type
    c. By user's login and file permissions on systems where the data reside
8) Allow for image delivery
    a. Allow delivery of raw data, intermediary files, or product layers
9) Vendor will provide limited training not to exceed 3 days local to the Washington DC area.

Acceptance Testing

The vendor will demonstrate the following processes for the Data Storage Package:

1) The system powers on, fully boots, and can be connected to by multiple clients

2) The system at maximum power draw is within the specification of the requested UPS
3) The entire system will shutdown gracefully when power is cut to any of the UPS systems
    a. Movement of data onto the physical storage system either through an external drive or through a network connection, including movement of data into the off line state
4) Demonstrate that network bandwidth is within accepted levels

The Vendor will demonstrate the following processes for Data Organization Software Package:

1) Vendor will start the server software and demonstrate the clients can connect to the server
2) Using the client, the vendor will demonstrate the ingestion of a data in a standard format. Demonstrate provisioning and the ability to view the data on a client
3) Demonstrate viewing of extracted bands, altering datum, adding layers
4) Demonstrate the ingestion of data from multiple locations

Specification	Required	Desired
Data Storage Package		
Online disk based storage	192 TB	256 TB
Near Line storage (tape or disk based)	32 TB	128 TB
Off line storage limited only by media	Yes	
Server 1 GB/s Ethernet ports	2 ports	4 ports
System allows user based security settings	Yes	
System design allows for future expansion of storage	Yes	
Number of 55U racks required to house system	2	1
Training on storage system	Yes	
Data Organization Software Package		
Data organization system runs on own server		Yes
Server specifications are sufficient to support X number of clients wanting to view data products	15	25
Automatic cataloging of metadata can work by 'crawling" through predetermined directories	Yes	
Metadata , once acquired, can be edited	Yes	
Allow for automatic provisioning of data	Yes	
Connect and process data using web based client	Yes	
Allows reprojection of data	Yes	
Allows subsetting of images	Yes	
Allows for mosaicing of images	Yes	

Allows data searches based on location, datum data type	Yes	
Import, display, and export vector data	Yes	
Input data file formats	Geotiff, NITF, MrSid, BIL/BSQ, jpegs, World Jpegs and HDF	
Create and execute processing chains	Geotiff, NITF, MrSid, BIL/BSQ, jpegs, World Jpegs and HDF	
Allows user based security	Yes	
Allows image delivery	Yes	
Training class	Yes	